

THU. 17 NOV. 1921

## REPORT ON ELECTRIC LIGHTING INSTALLATION. No. 28178

Port of Sunderland Date of First Survey 3<sup>rd</sup> Oct '21 Date of Last Survey 18<sup>th</sup> Oct '21 No. of Visits 6  
 No. in Reg. Book 11945 on the Iron or Steel SS "CHARTERED" Port belonging to London  
 Built at Sunderland By whom John Brown & Sons Ltd When built 1921  
 Owners Gas Light & Coke Co. Ltd Owners' Address 4 St. Dunstan's Alley, London E.C.3.  
 Yard No. 167 Electric Light Installation fitted by Sunderland Forge & Eng' Co. Ltd. When fitted 1921

## DESCRIPTION OF DYNAMO, ENGINE, ETC.

One compound plant consisting of single cylinder vertical, open type inverted engine 110 lbs  
drives 350 Revs coupled to compound wound multipolar dynamo.

Capacity of Dynamo 80 Amperes at 100 Volts, whether continuous or alternating current continuous

Where is Dynamo fixed In Engine room Whether single or double wire system is used double

Position of Main Switch Board Close to Dynamo having switches to groups five of lights, &c., as below

Positions of auxiliary switch boards and numbers of switches on each In chart room with switches controlling  
Foremast, Mainmast, Port, Starb, Stern, Morse Lamp, Compass & Telegraphs.

If fuses are fitted on main switch board to the cables of main circuit yes and on each auxiliary switch board to the cables of auxiliary circuits yes and at each position where a cable is branched or reduced in size yes and to each lamp circuit yes

If vessel is wired on the double wire system are fuses fitted to both flow and return wires or cables of all circuits including lamp circuits yes

Are the fuses of non-oxidizable metal yes and constructed to fuse at an excess of 100 per cent over the normal current

Are all fuses fitted in easily accessible positions yes Are the fuses of standard dimensions yes If wire fuses are used are permanent instructions fitted on or near each switch board giving particulars of proper size of fuse for each circuit yes

Are all switches and fuses constructed of incombustible materials and fitted on incombustible bases yes

Total number of lights provided for 115 @ 16<sup>th</sup> arranged in the following groups:—

A <u>Navigation</u>	<u>22</u> lights each of <u>16</u>	candle power requiring a total current of <u>13.2</u>	Amperes
B <u>Saloon</u>	<u>13</u> lights each of <u>"</u>	candle power requiring a total current of <u>25.8</u>	Amperes
C <u>Engineers &amp; Up</u>	<u>33</u> lights each of <u>"</u>	candle power requiring a total current of <u>19.8</u>	Amperes
D <u>Engine Room</u>	<u>17</u> lights each of <u>"</u>	candle power requiring a total current of <u>10.2</u>	Amperes
E <u>Winches</u>	<u>-</u> lights each of <u>-</u>	candle power requiring a total current of <u>-</u>	Amperes
<u>2</u> Mast head lights with <u>1</u> lamp each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes	
<u>2</u> Side lights with <u>1</u> lamp each of <u>32</u>	candle power requiring a total current of <u>2.4</u>	Amperes	
<u>4</u> Cargo lights of <u>6 - 16</u>	candle power, whether incandescent or arc lights <u>Incandescent</u>		

If arc lights, what protection is provided against fire, sparks, &c. none fitted

Where are the switches controlling the masthead and side lights placed In chart room

## DESCRIPTION OF CABLES.

Main cable carrying <u>80</u> Amperes, comprised of <u>19</u> wires, each <u>.064</u> S.W.G. diameter, <u>.06</u> square inches total sectional area
Branch cables carrying <u>25.8</u> Amperes, comprised of <u>4</u> wires, each <u>.064</u> S.W.G. diameter, <u>.022</u> square inches total sectional area
Branch cables carrying <u>19</u> Amperes, comprised of <u>7</u> wires, each <u>.036</u> S.W.G. diameter, <u>.007</u> square inches total sectional area
Leads to lamps carrying <u>6</u> Amperes, comprised of <u>3</u> wires, each <u>.029</u> S.W.G. diameter, <u>.002</u> square inches total sectional area
Cargo light cables carrying <u>3.6</u> Amperes, comprised of <u>3</u> wires, each <u>.029</u> S.W.G. diameter, <u>.002</u> square inches total sectional area

## DESCRIPTION OF INSULATION, PROTECTION, ETC.

Main Pure & Pure IR. Taped Vulcanized then Armoured & Braided.  
Machinery Spaces " " " " then Lead covered Arm & Braided  
Accommodation " " " " then Lead covered.  
 Joints in cables, how made, insulated, and protected none made

Are all the joints of cables thoroughly soldered, and the flux used not containing acids or other corrosive substances - Are all joints in accessible positions, none being made in bunkers, cargo spaces, or spaces which may at any time be used for carrying cargo, stores, or baggage -

Are there any joints in or branches from the cable leading from dynamo to main switch board none made

How are the cables led through the ship, and how protected Armoured & Braided cables clipped to beams.



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DESCRIPTION OF INSULATION, PROTECTION, ETC.—continued.

Are they in places always accessible Yes

What special protection has been provided for the cables in open alleyways or where exposed to weather or moisture Lead covered, Armoured & Braided

What special protection has been provided for the cables near galleys or oil lamps or other sources of heat

What special protection has been provided for the cables near boiler casings

What special protection has been provided for the cables in engine room

How are cables carried through beams Fibre bushed pipes through bulkheads, &c. N/T. Glants

How are cables carried through decks N/T. Deck Tubes

Are any cables run through coal bunkers Yes or cargo spaces Yes or spaces which may be used for carrying cargo, stores, or baggage

If so, how are they protected Lead covered, Armoured & Braided

Are any lamps fitted in coal bunkers or spaces which may at times be used for cargo, coals, or baggage

If so, how are the lamp fittings and cable terminals specially protected

Where are the main switches and fuses for these lights fitted

If in the spaces, how are they specially protected

Are any switches or fuses fitted in bunkers No

Cargo light cables, whether portable or permanently fixed Portable How fixed

In vessels fitted on the single wire system, how is the dynamo terminal fixed to the hull of vessel

How are the returns from the lamps connected to the hull

Are all the joints with the hull in accessible positions

Is the installation supplied with a voltmeter Yes, and with an amperemeter Yes, fixed to the main switch

VESSELS BUILT FOR CARRYING PETROLEUM.

In vessels built for carrying petroleum, are all switches and fuses fitted in positions not liable to the accumulation of petroleum vapour or gas

Are any switches, fuses, or joints of cables fitted in the pump room or companion

How are the lamps specially protected in places liable to the accumulation of vapour or gas

The copper used is guaranteed to have a conductivity of not less than that of the Engineering Standards Committee's standard, and the wires are protected by tinning from the sulphur compounds present in the insulating material.

Insulation of cables is guaranteed to have a resistance of not less than 600 megohms per statute mile at 60° Fahrenheit after 24 hours' immersion in water, the test being made after one minute's electrification at not less than 500 volts and while the cable is still immersed.

The foregoing statements are a correct description of the Electric Light installation fitted by us on this vessel and we declare that it is at this date in good order and safe working condition.

p.pro. THE SUNDERLAND FORGE & ENGINEERING CO. LTD

Electrical Engineers

Date 4th November 1921

COMPASSES.

Distance between dynamo or electric motors and standard compass

14 1/2 feet

Distance between dynamo or electric motors and steering compass

14 3 feet

The nearest cables to the compasses are as follows:—

A cable carrying 13.2 Amperes 6 feet from standard compass 10 feet from steering compass

A cable carrying .6 Amperes 5 feet from standard compass led into feet from steering compass

A cable carrying .6 Amperes led into feet from standard compass 5 feet from steering compass

Have the compasses been adjusted with and without the electric installation at work at full power yes

The maximum deviation due to electric currents, etc., was found to be Nil degrees on any course in the case of the standard compass and Nil degrees on any course in the case of the steering compass.

J. C. Crown Director

Builder's Signature. Date 15-11-21.

GENERAL REMARKS.

The installation has been satisfactorily fitted in the vessel, tested and found good

It is submitted that this vessel is eligible for THE RECORD. Elec. Light.

Fee £ 8-0-0

Applied for 21/10/21  
Paid 24/10/21

24/10/21  
17/11/21

S. C. Davis

Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Im. 7.10—Transfer.

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.



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